

SECTION 423

FOUNDATIONS FOR SIGNAL AND LIGHTING INSTALLATIONS

423.1 GENERAL: This work shall consist of constructing concrete foundations for support of traffic signal standards, luminaire standards, control cabinets, and ground mounted transformers, in compliance with the specifications, details shown on the plans, Standard Drawings, and at the locations shown on the plans, or as established by the ENGINEER.

423.2 REFERENCES

423.2.1 American Association of State Highway and Transportation Officials (AASHTO) Standard Specifications, Latest Edition

423.2.2 American Society for Testing and Materials (ASTM) Standard Specifications, Latest Edition

A36 Structural Steel

A307 Carbon Steel Bolts and Studs; 60,000 psi Tensile

423.2.3 National Electrical Code (NEC), Latest Edition

423.2.4 This Publication, Latest Edition

SECTION 101 PORTLAND CEMENT CONCRETE

SECTION 102 STEEL REINFORCEMENT

SECTION 501 EXCAVATION AND BACKFILL FOR STRUCTURES

SECTION 510 CONCRETE STRUCTURES

SECTION 701 TRENCHING, EXCAVATION, AND BACKFILL

SECTION 1502 SUBMITTALS

423.3 MATERIALS:

423.3.1 Concrete design including cement, air entrainment, and other admixtures, water and aggregate shall conform with the requirements of Section 101 Portland Cement Concrete.

423.3.2 Concrete installation shall conform with the requirements of Section 510 - Concrete Structures. The design mix shall be provided to the ENGINEER for approval.

423.3.3 Steel reinforcement shall conform with the requirements of Section 102 - Steel Reinforcement.

423.4 CONSTRUCTION REQUIREMENTS.

423.4.1 Concrete foundations may be cast in place or precast. Foundations shall be placed on firm ground. Forms shall be true to line and grade, rigid, and securely braced. The concrete for each foundation shall be placed in one operation. Exposed portions of cast-in-drilled-hole foundations shall be formed to present a neat appearance. The forms and ground shall be thoroughly moistened before concrete placement.

423.4.2 Ground rods shall be installed as shown on the Standard Drawings.

423.4.3 A template shall be used to insure that conduit stubs and anchor bolts are held in proper position during concrete placement until the concrete has set. After placement and before setting of concrete, anchor bolts shall be raised and lowered individually to eliminate air pockets and distribute aggregate, and shall be aligned properly.

423.4.4 Exposed surfaces of concrete foundations shall receive a finish that is smooth, straight, and free of form marks.

423.4.5 Concrete foundations shall be backfilled according to the requirements of Section 501 - Excavation and Backfill for Structures and details in the plans. Proper drainage shall be provided on slopes. Backfilling will be considered incidental to the completion of the work and no measurement or direct payment will be made therefore.

423.4.6 When it is discovered during excavation for a concrete foundation that the location shown on the plans conflicts with existing underground or overhead utilities, a new location will be determined by the ENGINEER if possible. The ground surface at plans locations shall be restored to its original elevation. If the location cannot be changed, a new foundation design or utility relocation will be done as authorized by the ENGINEER.

423.4.7 Foundations shall be constructed as designated on the Standard Drawings unless the plans show otherwise or the ENGINEER directs otherwise. Foundations located in sidewalks shall be level with the surface of the sidewalk and shall conform with the "Americans with Disabilities Act". Expansion material shall be placed between the foundation and the sidewalk.

423.4.8 Foundations for standards with mast arms shall be carefully positioned so that the standards may be oriented as shown on the plans.

423.4.9 Foundations shall cure for a minimum of 7 days after concrete placement before signal and lighting standards are installed.

423.5 MEASUREMENT AND PAYMENT.

423.5.1 The accepted quantities of portland cement concrete and steel reinforcement for concrete foundations for signal standards, controller cabinets, and splice cabinets complete in place will be measured by the unit complete in place as shown on the bid proposal.

423.5.2 Concrete foundations for luminaries (including portland cement concrete and reinforcing steel) will be measured by the unit complete in place as shown on the bid proposal.

423.5.3 The accepted quantity of foundations for signal standards, controller cabinets, splice cabinets, and luminaries will be paid for at the contract unit price per unit of measurement for each of the pay items listed as shown on the bid proposal.